Stigmella sorbi (Lepidoptera: Nepticulidae), new to the Belgian fauna

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Abstract. On 27 May 2011 2 tenanted mines of *Stigmella sorbi* (Stainton, 1851) were found on Rowan (*Sorbus aucuparia*) at Bagimont (near Bohan, Namur). On 30 May another 3 tenanted mines were found at Orchimont. It is the first record of this species for the Belgian fauna. During a later excursion at Forges (province of Hainaut), about 10 vacated mines were found. On 23 June 2012, some tenanted mines on *Sorbus aucuparia* were found at Weywertz and at Rocherath (province of Liège).

Samenvatting. *Stigmella sorbi* (Lepidoptera: Nepticulidae), nieuw voor de Belgische fauna
Op 27 mei werden te Bagimont (nabij Bohan, Naamse Ardennen) op lijsterbes (*Sorbus aucuparia*) 2 mijnen van *Stigmella sorbi* (Stainton, 1861) gevonden. Op 30 mei werden nog 3 bewoonde mijnen gevonden maar dan te Orchimont. Het is de eerste keer dat deze soort wordt vastgesteld in België! Tijdens een latere excursie te Forges (Henegouwen) werden nog een tiental verlaten mijnen gevonden. Op 23 juni 2012 werden te Weywertz en te Rocherath (provincie Luik) enkele bewoonde mijnen gevonden op lijsterbes.

Résumé. *Stigmella sorbi* (Lepidoptera: Nepticulidae), nouvelle espèce pour la faune belge
Le 27 mai deux mines de *Stigmella sorbi* (Stainton, 1851) furent trouvées sur le sorbier des oiseleurs (*Sorbus aucuparia*) à Bagimont (près de Bohan, Ardennes namuroises). Le 30 mai, trois mines supplémentaires furent trouvées à Orchimont. Chaque fois, les chenilles étaient présentes dans leur mine. Il s'agit de la première mention de cette espèce pour la faune belge! Durant une excursion plus tardive dans la saison, à Forges (Ardenne chimacienne), une dizaine de mines vides furent également trouvées. Le 23 juin 2012 des mines sur *Sorbus aucuparia* furent trouvées à Weymwertz et à Rocherath (Liège).

Key words: *Stigmella sorbi* – Faunistics – First record – Belgium.

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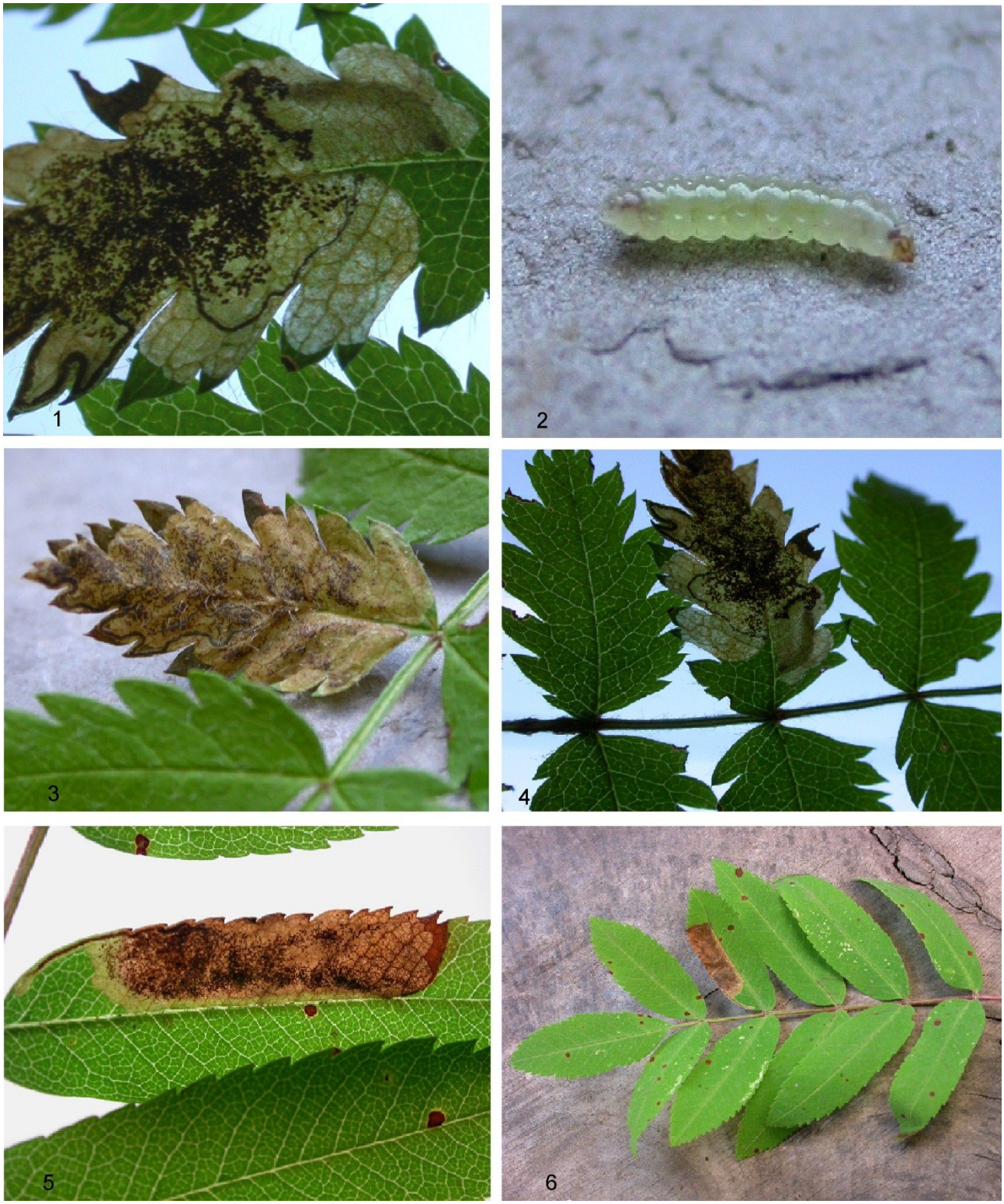
Introduction

At the end of May 2011 I stayed for 4 days in a chalet near the river Semois at Bohan (province of Namur). Because we were able to use electricity from the chalet, I used a 250W lamp every night to lure moths. The first night was the best! Lots of different species were attracted to the lamp and some of them were new to the province of Namur. Only the first night we had temperatures as high as 14°C because of a clouded sky and there was almost no wind. The other days we had more sunny weather and less clouds, which resulted in more butterflies during the day and less moths during the night. During the day it was pleasant to make long walks in and around Bohan. Every day another aria wasd visited in order to enjoy the beautiful nature and wildlife. During the first walk in Bagimont on the 27th of May, some mined leaves on Rowan, *Sorbus aucuparia* were noticed. They were identified as *Stigmella sorbi* (Stainton, 1861). On 30rd May we visited Orchimont, where we found the species again: 3 tenanted mines on *Sorbus aucuparia*. During the next excursion on the 18th of June the same species was found again at Forges (Bois de Forges, province of Hainaut). There the "Workgroup Leaf mines" found a dozen vacated mines on *Sorbus aucuparia* but also on *Sorbus americana*. Besides the first mines of *Stigmella sorbi*, we found on *Sorbus aucuparia* many tenanted mines of *Stigmella nylandriella* and of *Stigmella magdalenae*. The latter is a recently discovered species in Belgium (Baugnée & Van As 2012). On 23rd June 2012, some tenanted mines were found at Rocherath and at Weywertz near Butgenbach (province of Liège), leg. Workgroup Leaf mines. At the moment there are 107 different species in the genus *Stigmella* Schrank, 1802 in Europe (Karsholt & van Nieukerken 2011), of which 49 species are present in Belgium (De Prins & Steeman 2011). Now we can add one new species to the Belgian fauna, which brings the total to 50 species in Belgium. *Stigmella sorbi* is new to Hainaut, Liège and Namur.

Biology

The mine starts as a slender gallery about 15 mm long almost completely filled with black frass. Then the gallery abruptly turns into a blotch were the frass is scattered irregularly and attached to the upper cuticle (Emmet 1976). The early gallery is most of the times incorporated in the blotch, but the frassline is still clearly visible (as in Fig. 1). When the leaflets are rather small the blotch may occupy the whole leaflet (as in Figs. 1, 3 & 4), and the caterpillar will be crossing the midrib only at the tip of the leaflet. But when the leaflets are longer, as was the case on *Sorbus americana* (Figs. 5 & 6), the gallery and following blotch are confined to one side of the leaflet. The egg is deposited at the underside of the leaf of different Rosaceae trees such as *Cotoneaster* spp., *Malus* spp., *Amelanchier* spp., but the main food plant is *Sorbus aucuparia* and sometimes other species of *Sorbus* (Johansson *et al*. 1989). The larva is pale greenish, with a pale brown head (as seen in Fig. 2). The cocoon is brown to deep brown (Emmet 1976). *Stigmella sorbi* has only one generation a year. According to Emmet (1976), the moths fly in May and the larvae feed in June in the south of England, but rather later in the north. Also according to Johansson *et al*. (1989) the larva appears from the second half of June. It is one of the first Nepticulid moths to appear in spring. However, the record of an active larva on the 27th of May is relatively early compared to literature data. This can, however, be explained by an average temperature which was 5°C higher than normal in April 2011. The average maximum temperature in April 2011 reached even 19.6°C, whereas the normal value is 14.2°C. During 16 days the temperature rose

above 20°C! The beginning of May was a little bit colder but from the 6th of May the temperature was again above 20°C, with a maximum of 26.9°C on the 7th (Anonymous 2011). This clearly resulted in earlier emerging moths which could explain the early feeding caterpillars.



Figs. 1–8. *Stigmella sorbi* (Stainton, 1861); **1–4**. Mines on *Sorbus aucuparia*, Bagimont (Belgium, Namur), 27.v.2011, leg. and photos S. Wullaert; **5–6**. Mines on *Sorbus americana*, Forges, Bois de Forges (Belgium, Hainaut), 18.vi.2011, leg. Workgroup Leaf mines, photos C. Snyers.

Distribution

Stigmella sorbi is widespread in Europe, especially the northern half and in the mountain areas of South and Central Europe (Karsholt & van Nieukerken 2011). *Stigmella sorbi* was described from England by Stainton (1861). It is rather local in the south and in Ireland, but commoner in the north and in Scotland, where its range extends to the Shetland Islands. (Emmet 1976). In 2010 *Stigmella sorbi* was found on 4 different sites, but always

in low numbers (pers. comm. Rob Edmunds). Sometimes the species may occasionally occur in high densities in northern Scandinavia and the Alps (Johansson *et al.* 1989), which is confirmed by Bengtsson who writes that the species is common in Sweden, Finland, Denmark and Norway. Only in the northernmost part of Norway it is absent (Bengttson 2008). In the Netherlands the first certain discovery of *Stigmella sorbi* was in 1969. The species was only found in a couple of scattered places in The Netherlands (Kuchlein 1993). *Stigmella sorbi* is a boreo-montane species, which in Southern Europe only occurs in mountains, like in Spain, where it was found by van Nieukerken & Laštůvka on the 6th July 2002 at an altitude of 1000 m in Segura de los Baños, Teruel (van Nieukerken & Laštůvka 2004).

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